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**R**EPORT

# **PRAHA AIRFRAME PLANT VODOCHODY LETOV (S)**

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**STRATEGIC WEAPONS INDUSTRIAL FACILITIES  
CZECHOSLOVAKIA  
JULY 1979**

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INSTALLATION OR ACTIVITY NAME <b>Praha Airframe Plant Vodochody Letov</b>				COUNTRY <b>CZ</b>	
UTM COORDINATES <b>NA</b>	GEOGRAPHIC COORDINATES <b>50-13-18N 014-24-09E</b>	CATEGORY	IRE NO.	COMIREX NO.	NIFIR NO.
MAP REFERENCE <b>DMA. USATC, Series 200, Sheet 0231-15, scale 1:200,000</b>					
LATEST IMAGERY USED <div></div>				NEGATION DATE (If required) <b>NA</b>	

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**ABSTRACT**

1. (TSR) This report provides an initial NPIC basic description of Praha Airframe Plant Vodochody Letov, Czechoslovakia, and substantially satisfies the basic reporting requirement for this target. On  the date of the latest imagery used in this report, the plant consisted of 102 buildings and structures (72 of which are considered significant) and contained 116,230 square meters of usable floorspace.

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2. (S/WNINTEL) This report includes a basic description of Praha Airframe Plant Vodochody Letov, a discussion of chronological developments, and a summary of production, assembly, repair, and aircraft modification activities at the plant. This report also contains a location map, two annotated photographs, a table of mensural and chronological data, and a chart of activity at the plant and aircraft observations.

3. (S/WNINTEL) Klecany/Vodochody Airfield, the test and flyaway field for the plant, is also described in this report.

**INTRODUCTION**

4. (S/WNINTEL) Praha Airframe Plant Vodochody Letov, Czechoslovakia (Figure 1), has an area of approximately 49 hectares and is 8.3 nautical miles northwest of the city of Praha (Prague), on the north side of Klecany/Vodochody Airfield (). It is on relatively flat terrain in primarily agricultural surroundings. Future expansion could take place in all directions with the exception of south.

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5. (S/WNINTEL) The plant (Figure 2) is secured by a 3-to-5-meter-high wall, except where the outer face of a building becomes part of the plant perimeter. Access into the plant is restricted to one rail and seven vehicle/pedestrian entrances. Klecany/Vodochody Airfield (Figure 2), the test and flyaway field for the plant, is secured by a fence, except where it shares security with the plant.

**BASIC DESCRIPTION**

6. (TSR) Praha Airframe Plant Vodochody Letov contains 102 buildings and structures of which 72 are considered significant. Major structures (Figure 3) include four administration buildings (items 51, 52, 67, and 72, Table 1), two engineering buildings (items 54 and 63), a final assembly building (item 35), an assembly building (item 48), and a subassembly building (item 11). Other significant buildings/structures include a checkout/paint hangar, a repair hangar, an aircraft weapons ballistics test building, an open-air engine test facility (with an associated control building and pumphouse), an engine run-up building, seven shop buildings, a shop/maintenance building, a steam/heating plant, a carpentry shop, a rail service/maintenance building, three transshipment buildings, two vehicle storage buildings, an apprentice school<sup>1</sup> (items 17 through 21), a POL storage facility, a water storage facility, a reservoir, 33 storage buildings, and a support building.

7. (TSR) As of  the information cutoff date for this report, the plant contained approximately 116,230 square meters of usable floorspace. A functional breakdown of this floorspace is presented below.

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Function	Floorspace (sq m)
Administration/engineering	26,764
Fabrication/assembly/repair	45,061
Direct support	19,283
General support/storage	<u>25,122</u>
Total floorspace	116,230

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8. (TSR) Klecany/Vodochody Airfield (Figure 2) consists of a 2,500- by 52-meter, east-southeast/west-northwest, serviceable concrete runway; a parallel concrete taxiway; a concrete end-connecting link; a concrete crossover link; two concrete parking aprons; a concrete loop turnaround; a compass rose (Figure 3); a control tower; and extensive electronic equipment.

9. (TSR) Electronics equipment observed at the airfield on [ ] included OR-2 and RP-2 ground-control approach (GCA) radars, a TALL PATH glidescope transmitter, a THIN PATH localizer, HAY-series instrument landing system (ILS), air-to-ground communications, and an inner marker beacon.

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### Chronological Development

10. (S/WNINTEL) The earliest usable imagery of Praha Airframe Plant Vodochody Letov was aircraft (TALENT) photography of [ ]. Because of the poor image quality, however, only two buildings could be discerned, the final assembly building (item 35) and the repair hangar (item 68). On [ ] the date of the first usable satellite coverage of Vodochody, the plant contained 48 buildings and structures with a combined usable floorspace of 99,705 square meters. These buildings and structures included three administration buildings (items 51, 67, and 72), an engineering building (item 63), the final assembly building (item 35), the assembly building (item 48), and the subassembly building (item 11).

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11. (S/WNINTEL) Construction between [ ] (Figure 3) resulted in a net increase of 12,171 square meters, bringing the total floorspace to 111,876 square meters. Fifty buildings were constructed during this period, including 20 which are considered significant; of these significant buildings, none were directly related to production activity. Other construction included the addition of an engineering section (item 63b) and a storage section (item 32b).

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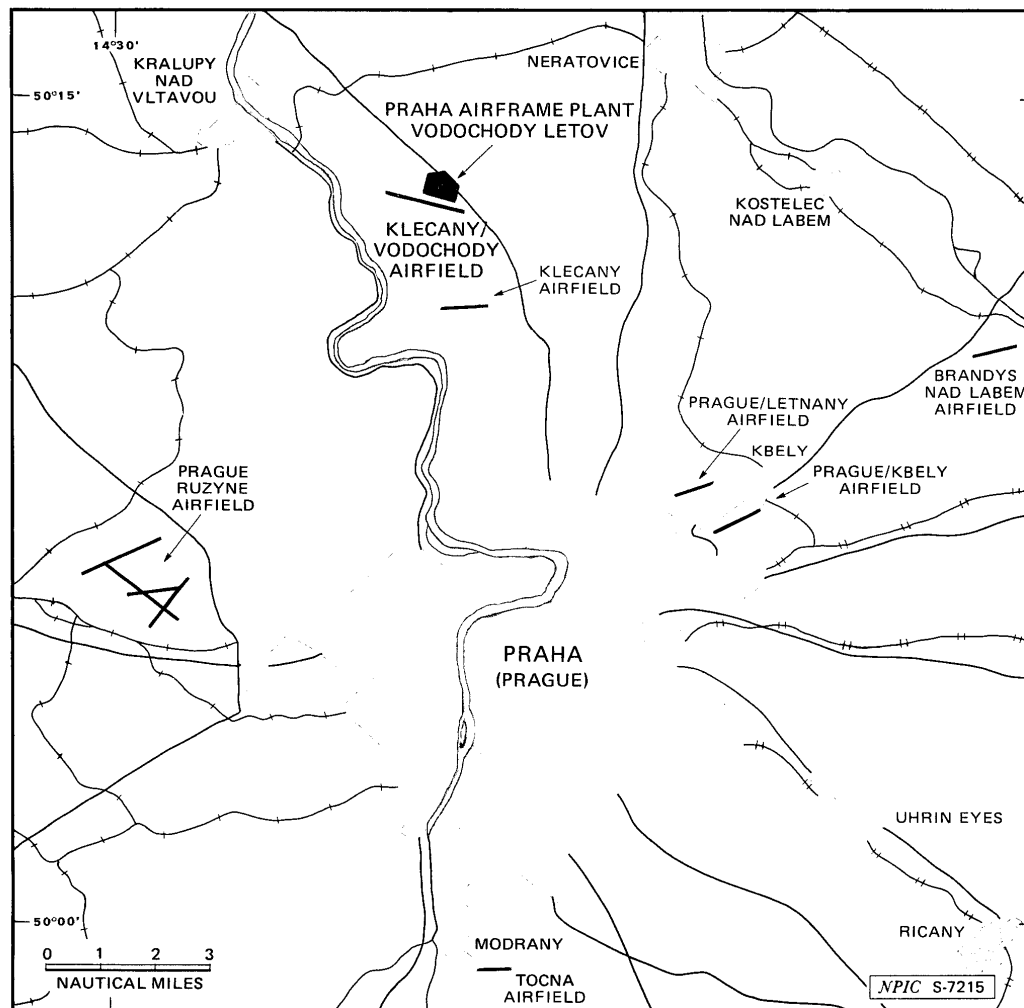


FIGURE 1. LOCATION OF PRAHA AIRFRAME PLANT VODOCHODY LETOV, CZECHOSLOVAKIA

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12. (TSR) Construction between [ ] resulted in a net increase of 4,354 square meters of floorspace, bringing the total to the current 116,230 square meters. Four buildings were constructed during this period: an administration building (item 52), an engineering building (item 54), and two storage buildings (items 12 and 53). Additionally, three storage building sections (items 34b, 58a, and 66a) were added and the roofs of five buildings (items 4, 11, 25, 36, and 39) were refurbished.

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### Plant Activity\*

#### Production

13. (S/WNINTEL) Prior to [ ] Vodochody was involved in the licensed production of MiG-15 (FAGOT) and MiG-17 (FRESCO) aircraft (Figure 4). Production of the FAGOT began in early 1954 and ended in early 1959. FRESCO production began in early 1960 and ended in early 1963.<sup>2</sup> The number of FAGOT and FRESCO aircraft produced at Vodochody is unknown; one FAGOT and one FRESCO were seen at the plant on [ ] long after production had ceased.

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14. (TSR) Production of the L-29 Delfin (MAYA), a twin-seat primary jet-flight trainer, probably began in early 1964<sup>2</sup> and as many as 20 MAYAs per month may have been produced at Vodochody through 1972.<sup>3</sup> MAYA production slackened between 1973 and 1975; by late 1975 the program had terminated.<sup>3</sup> However, observations of MAYA aircraft at the plant (Figure 4) since late 1975 suggest that some refit/repair activity may be taking place. The MAYA, which serves as the basic jet trainer for all Warsaw Pact countries except Poland,<sup>4</sup> was also produced at Kunovice Airframe Plant [ ]. By mid-1976, the two plants may have produced as many as 3,840 MAYAs.<sup>3</sup>

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15. (S/WNINTEL) Two other MAYA versions were produced in a limited quantity; a single-seat aerobatic model (designated L-29A Akrobat), and a single-seat reconnaissance/counter-insurgency model with nose cameras and underwing weapons stores (designated L-29R). One L-29A was observed at the plant on [ ]. The L-29R, which has been exported to Iraq and possibly other Middle East countries,<sup>1</sup> has not been identified at the plant because of the lack of high-resolution coverage.

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16. (TSR) In early 1970 Praha Airframe Plant Vodochody Letov began production of the L-39 ALBATROS, a twin-seat jet-flight trainer, which was designed and built to meet criteria and specifications provided by Czechoslovakia's best customer, the Soviet Union.<sup>5</sup> Thus, the L-39 was designed to function as both a primary/advanced flight trainer (to replace some MAYAs in the Soviet inventory) and as a light attack aircraft. Soviet specifications called for a flight envelope consisting of a speed capability of 0.8 mach and gravity loads of 7.0 positive and 3.5 negative.<sup>5</sup> The gravity goals were evidently surpassed, however, since current estimates suggest that loads of 8.0 positive and 4.0 negative are possible.<sup>4</sup> L-39 observations at the plant (Figure 4) suggest that full-series production of this aircraft had begun by early 1973. As many as 920 L-39s may have been produced by mid-1978.<sup>3</sup> The light attack version of the L-39, probably designated the L-39D,<sup>4</sup> which features underwing pylon-mounted machine guns and rocket launchers, has probably been exported to several Third World countries<sup>6</sup> (as well as the Soviet Union) but has never been photographically confirmed at the plant, because of limited high-resolution coverage.

17. (TSR) Vodochody has also produced, and may still be producing, an unidentified directional communications antenna,<sup>2</sup> telescopic antenna masts, casings for radio sets, and MiG-21 (FISHBED) external fuel tanks.<sup>1</sup> The latter have been observed at the plant on several occasions in the vicinity of a storage building (item 13, Figure 3) in the south-central plant area.

#### Aircraft Assembly

18. (TSR) Licensed assembly of the Soviet MiG-21 (FISHBED) and Su-7 (FITTER) probably began at Vodochody in late 1968 and ended by late 1973.<sup>2,7</sup> A small number of FISHBEDs were probably also repaired between 1966 and 1968.<sup>8</sup> FISHBEDs were first observed at the plant on [ ] (Figure 4), and a total of seven had been seen by [ ]. The first FITTER aircraft was observed at the plant on [ ] a total of eight had been seen.

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#### Aircraft Repair and Modification

19. (S/WNINTEL) The repair of Soviet-built MiG-19 (FARMER) aircraft probably began at the plant by early 1966<sup>9</sup> and ended by mid-1971. The Czechoslovakian Air Force (CAF) requires

\*Because of limited photographic coverage (17 coverages between [ ]) extensive use was made of collateral information in determining activity levels at the plant.

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Table 1. Structures, Dimensions, and Construction Chronology, Praha Airframe Plant Vodoohody Letav  
(Items keyed to Figure 3)  
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Item	Description	Dimensions* (m)	Total Floorboard (sq. m)	Date Observed Complete	Remarks	Item	Description	Dimensions* (m)	Total Floorboard (sq. m)	Date Observed Complete	Remarks
		L W H						L W H			
1	Aircraft weapons facilities					36	Shop bldg				Roof refurbished by [redacted]
a	Tool bldg				Firing bay in corner	a	Shop sect				20 roof vents, open storage area
b	Weapons firing sect					b	Engr sect				& southeast traveling crane
c	Engr sect					37	Shop bldg				immediately W
d	Inter target sect					38	Stor bldg				3 roof monitors added
e	Monitoring sect					39	Shop bldg				between [redacted]
f	Outer target sect					40	Stor bldg				First observed when [redacted]
g	Monitoring sect					41	Shop bldg				
h	Stor sect					42	Stor bldg				
i	Stor sect				Mounted PGL tank immediately	43	Shop bldg				
j	Stor sect				NE supports engine test area	44	Stor bldg				
k	Stor sect				Supports engine test area with	45	Stor bldg				
l	Stor sect				2 open air test stands	46	Stor bldg				
m	Stor sect				Roof refurbished between [redacted]	47	Stor bldg				
n	Stor sect					48	Assembly bldg				
o	Stor sect					49	Stor bldg				
p	Stor sect					50	Stor bldg				
q	Stor sect					51	Admin bldg				
r	Stor sect					52	Admin bldg				
s	Stor sect					53	Stor bldg				
t	Stor sect					54	Engr bldg				
u	Stor sect					55	Stor bldg				
v	Stor sect					56	Stor bldg				
w	Stor sect					57	Stor bldg				
x	Stor sect					58	Stor bldg				
y	Stor sect					59	Stor sect				
z	Stor sect					60	Shop sect				
aa	Stor sect					61	Shop sect				
ab	Stor sect					62	Shop sect				
ac	Stor sect					63	Shop sect				
ad	Stor sect					64	Shop sect				
ae	Stor sect					65	Shop sect				
af	Stor sect					66	Shop sect				
ag	Stor sect					67	Shop sect				
ah	Stor sect					68	Shop sect				
ai	Stor sect					69	Shop sect				
aj	Stor sect					70	Shop sect				
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cy	Stor sect					137	Shop sect				
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ga	Stor sect					217	Shop sect				

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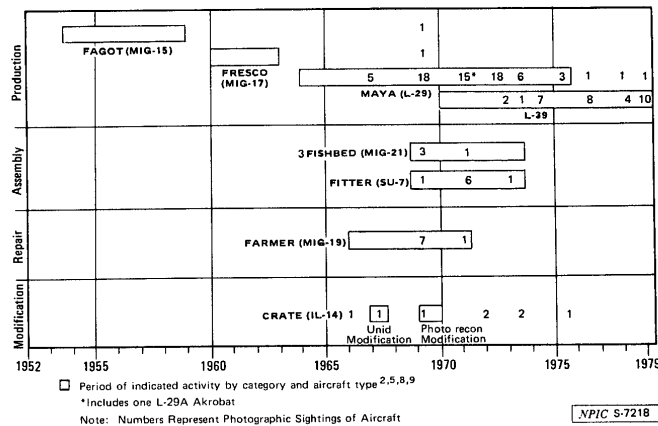


FIGURE 4. ACTIVITY AT PRAHA AIRFRAME PLANT VODOCHODY LETOV

maintenance of FARMER aircraft after every 400 hours of flying time. FARMER maintenance includes the changing of engines, extensive airframe stress tests, electronics equipment inspection and renovation, and repainting of the fuselage.<sup>9</sup> Seven FARMER aircraft were first observed at the plant on [ ] and one was seen on [ ]

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20. (S/WNINTEL) On two separate occasions Vodochody was involved in the modification of IL-14 (CRATE) aircraft of the CAF.<sup>2,8</sup> At the end of 1966, approximately 15 CRATE aircraft were delivered to the plant. Passenger seats were removed, and unknown modifications were made in the cabin. After modification, these aircraft featured a small bubble on the fuselage, directly beneath the cabin.<sup>2</sup> In February 1969, three CRATE aircraft were modified by the addition of a photo reconnaissance package mounted in the nose. These three CRATE aircraft were evidently intended for civilian use within Czechoslovakia<sup>8</sup> (probably terrain mapping). CRATE aircraft have been observed at the plant on several occasions, but no external modifications were discernible.

## REFERENCES

## IMAGERY

(TSR) All available TALENT and KEYHOLE imagery acquired between [ ] was used in the preparation of this report. Earlier German World War II (GX) and US TALENT photography was reviewed but not used due to unacceptable imagery quality.

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## MAPS OR CHARTS

DMA. US Air Target Chart, Series 200, Sheet 0231-15, scale 1:200,000 (UNCLASSIFIED)

## DOCUMENTS

1. DOD. IIR-1-521-0439-73, *Praha Airframe Plant Vodochody Letov*, 13 Sep 73 (CONFIDENTIAL)
2. DOD. IIR-2-218-3972-69, *Vodochody Aircraft Plant*, 22 Aug 69 (CONFIDENTIAL [ ])
3. DIA. [ ] DDB-1923-2A-78-SAO, *Foreign Aircraft Production Communist World (U)*, p 48, Dec 78 (TOP SECRET [ ])
4. *Jane's All the World's Aircraft*, 1973-74 (UNCLASSIFIED)
5. CIA. IIR-00-B-321/03770/78, *L-39 Aircraft Development/Specifications/L-29 Production/Organizational Information*, 12 Apr 78 (CONFIDENTIAL [ ])
6. *Jane's All the World's Aircraft*, 1974-75 (UNCLASSIFIED)
7. DIA. [ ] RDA-11/0050/72, *Praha Airframe Plant Vodochody/Letov*, Jun 72 (TOP SECRET [ ])
8. DOD. IIR-1-521-1023-70, *Aircraft Plant in Vodochody*, 15 Apr 70 (CONFIDENTIAL [ ])
9. CIA. IIR-CS-K-311/11375-69, *Aircraft Inspection at the Letov Airframe Plant at Vodochody*, 23 Dec 69 (CONFIDENTIAL)

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## REQUIREMENT

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(S) Comments and queries regarding this report are welcome. They may be directed to [ ] Warsaw Pact Forces Division, Imagery Exploitation Group, NPIC, [ ]

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